

# **Living With a Star**

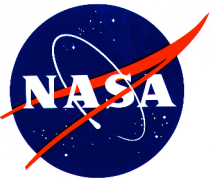
**A Systems Approach to Sun-Earth Science**

**O. C. St. Cyr**

**LWS Senior Project Scientist**

**NASA-GSFC Laboratory for Solar and Space Physics**

**301-286-2575 (Chris.StCyr@nasa.gov)**

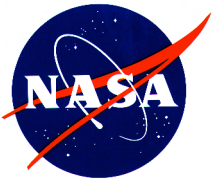


# LWS Program History

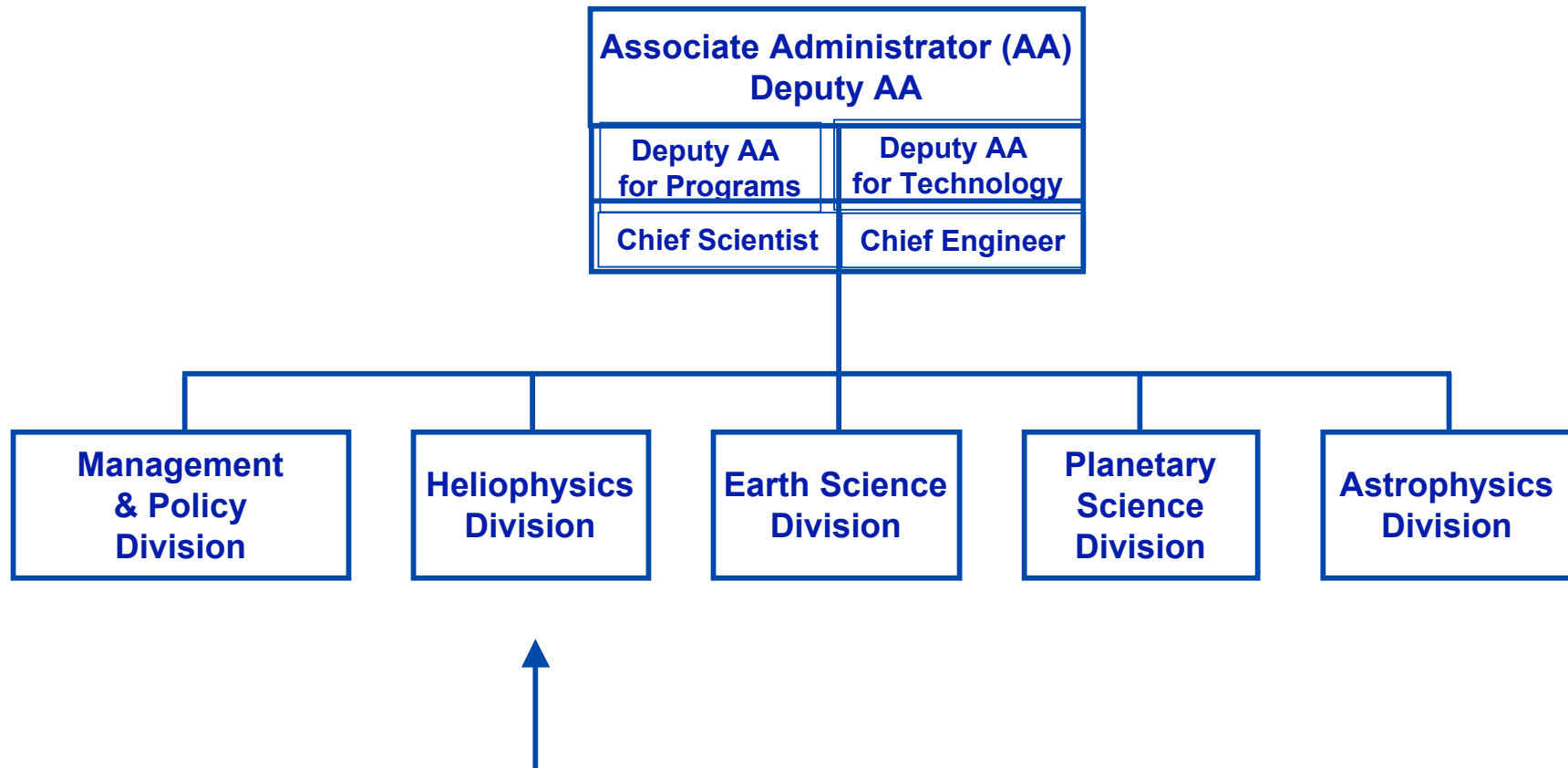
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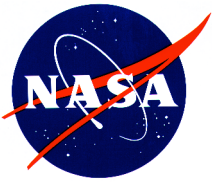


- **Spring 1999 - George Withbroe, SEC Theme Director began investigating the idea of a new initiative on Space Weather**
- **Spring 2000 - GSFC scientists organized a community meeting to gather input for LWS program**
- **Based on preliminary GSFC work, a new start was approved and moved up to 2001**
- **2000-2001 - Science Architecture Team defined the scientific program**
- **2001-2002 – SDO and Geospace Definition Teams**
- **2002-2003 – TR&T STDT**
- **May 2003 – First LWS MOWG meeting (Chair: L. Fisk)**
- **2005-2006 – Sentinels STDT**



# Science Mission Directorate Structure





# Heliophysics Division Program Content

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## Heliophysics Flight Program

Living with a Star Program

Solar Terrestrial Probes Program

Explorer Program<sup>#</sup>

Heliophysics Technology - New Millennium Program<sup>\*</sup>

Scientific Communications Program (GN and DSMS)<sup>\*</sup>

## Heliophysics Research

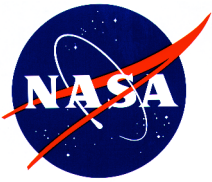
R&A

Operating Missions / Data / Modeling

Sounding Rocket Program

<sup>\*</sup> Managed for all SMD Scientific Divisions

<sup>#</sup> Managed for



# LWS Program Components

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- **Science Missions**

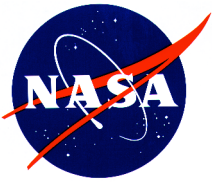
- Solar Dynamics Observatory (SDO)
- Geospace (RBSP, MoO, ITSP)
- Sentinels

- **Applied Science Missions**

- Space Environment Testbeds (SET)

- **LWS Science (Targeted Research and Technology)**

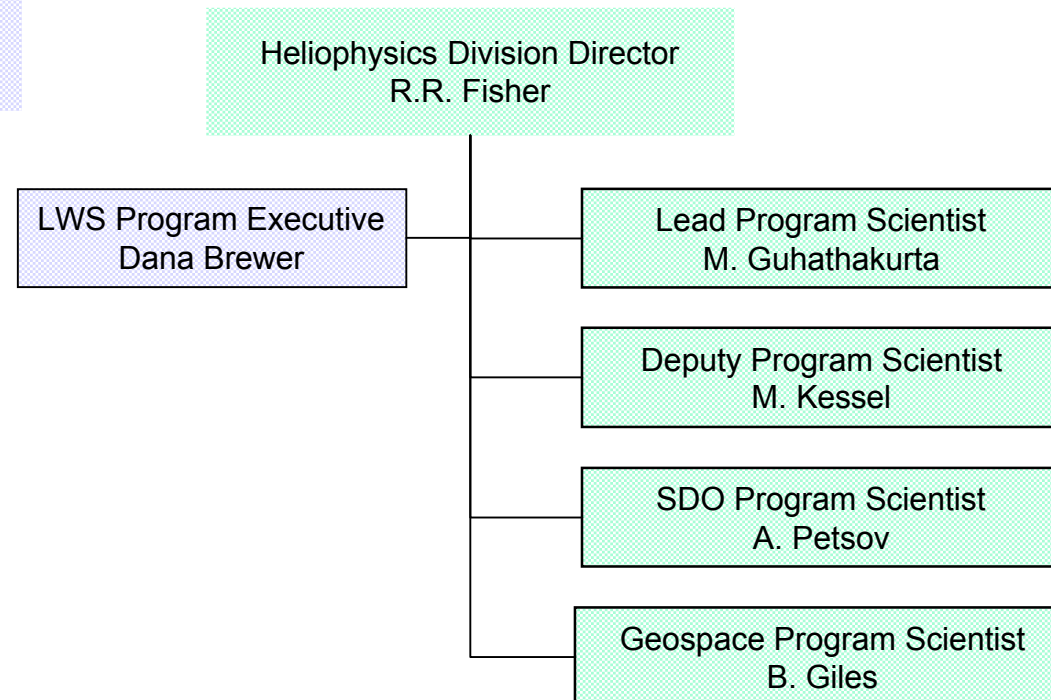
- Theory, Modeling, Data Analysis
- Data Environment Development (moved to MO&DA)

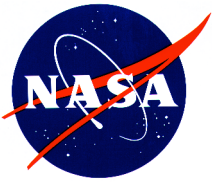


# HQ LWS Organization



## LWS Management Organization





## LWS Management Organization

LWS Program Executive  
Dana Brewer

Heliophysics Division Director  
R.R. Fisher

Lead Program Scientist  
M. Guhathakurta

NASA HQ

Heliophysics Program Manager  
Gil Colon

LWS Senior PS  
O.C. St. Cyr

NASA GSFC

Deputy Program Manager  
Mary DiJoseph

SDO PM  
Liz Citrin

SDO PS  
Dean Pesnell

SDO DPS  
B. Thompson

Geospace PM  
Tim Gehringer

Geospace PS  
David Sibeck

Geospace DPS  
J. Grebowsky

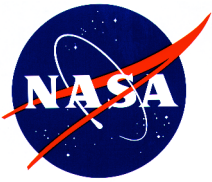
SET PM  
N. Barthelme

SET PS  
Mike Xapsos

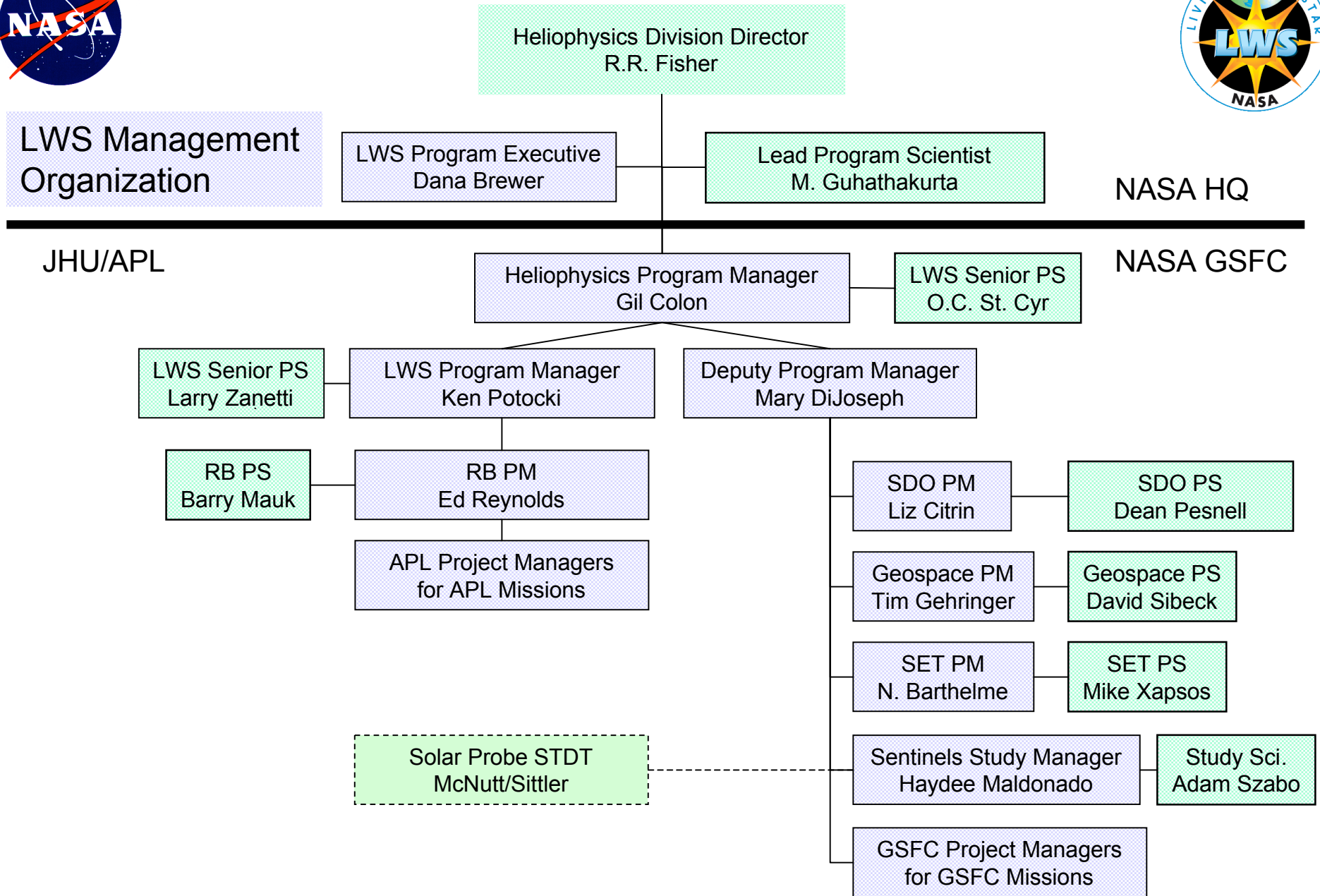
Sentinels Study Manager  
Haydee Maldonado

Sentinels Study Sci.  
Adam Szabo

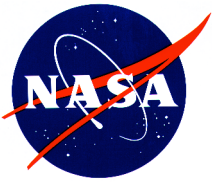
GSFC Project Managers  
for GSFC Missions



## LWS Management Organization







# Solar Probe Status



Chair: Dave McComas (SwRI)  
Study Scientist: Ed Sittler (NASA-Goddard)  
Study Scientist: Ralph McNutt (JHU-APL)  
Formulation Manager: Haydee Maldonado (NASA-GSFC)

*Solar Probe requires an  
augmentation to the LWS budget*

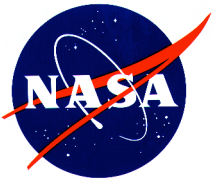
Loren Acton (MSU)  
Marianne Balat (France)  
Volker Bothmer (MPAe)  
Ray Dirling (SAIC)  
Bill Feldman (LANL)  
George Gloeckler (UMd)  
Shadia Habbal (UK)  
Don Hassler (SwRI)  
Geoffrey Landis (NASA-Glenn)  
Ingrid Mann (Germany)  
Bill Matthaeus (UDel)  
Dick Mewaldt (Caltech)  
Neil Murphy (JPL)

Leon Ofman (CUA)  
Chuck Smith (UNH)  
Marco Velli (Italy)  
Thomas Zurbuchen (UMich)  
Joe Davila (NASA-GSFC)

*Ex Officio:*  
Lika Guhathakurta (NASA-HQ)  
Adam Szabo (NASA-GSFC)  
Chris St. Cyr (NASA-GSFC)  
Richard Marsden (ESA)  
Bill Lewis (SwRI)  
Jean-Yves Prado (France)

## Engineering Risk Mitigation Studies

- Thermal Protection System (JHU/APL)
- PWI accommodation (JPL)
- Complete by 9/2006

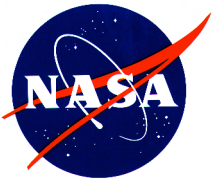


# Science Community Involvement

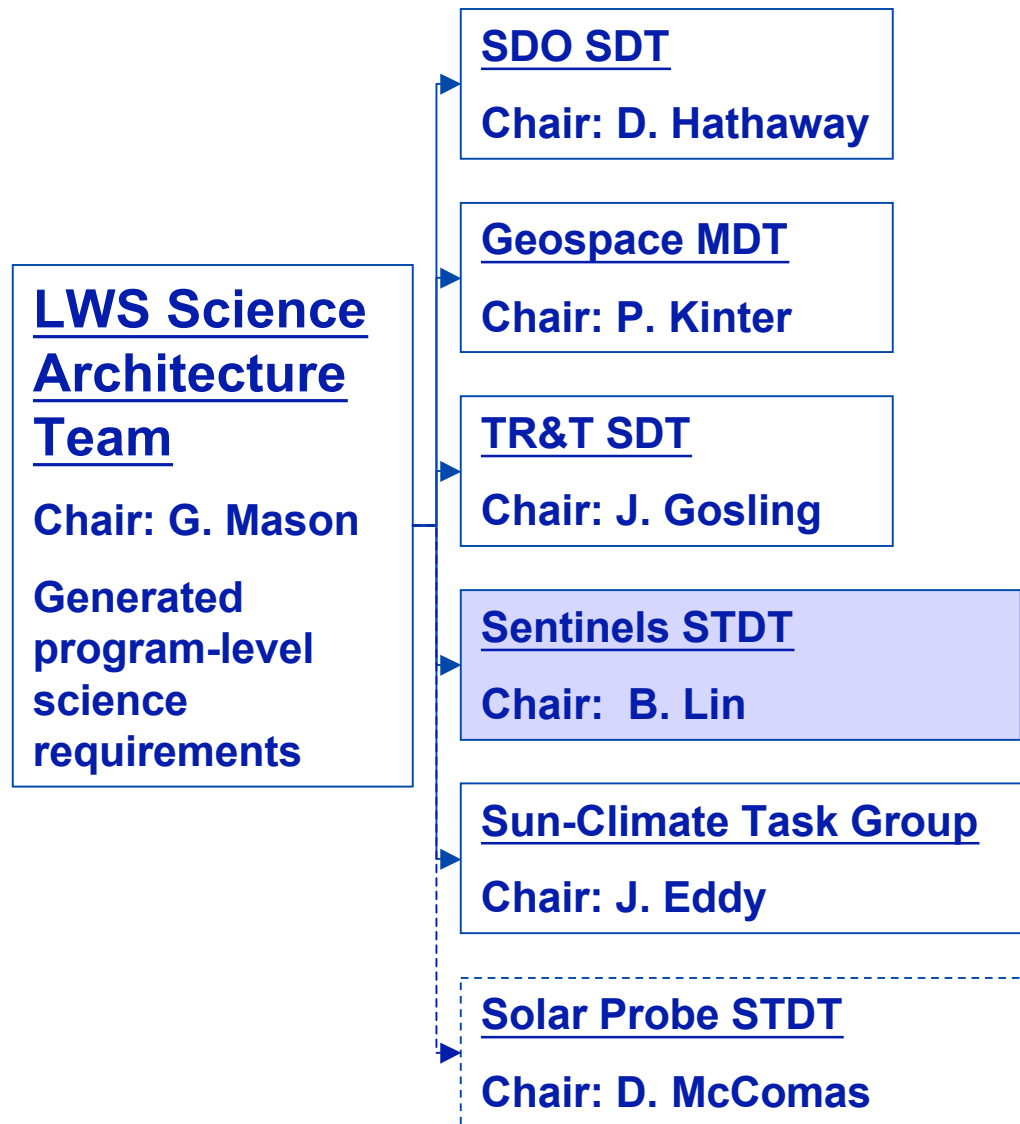
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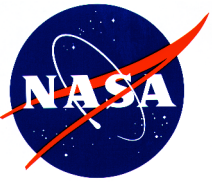


- **LWS Science Mission Definition Teams**
- **Science Workshops/Conferences**
- **2005 Heliophysics Strategic Roadmap**
- **LWS MOWGs**
  - **TR&T Steering Committees**



# LWS Mission Definition





# **LWS Science Workshops**

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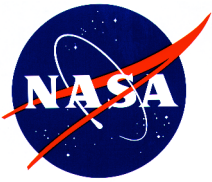


**May 2000 in Greenbelt**

**Nov 2002 at JHU/APL**

**March 2004 in Boulder**

**LWS support of many workshops**



# Education/Public Outreach

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- **LWS/STP Education focus has been K-12, but those efforts are ending**
- **NASA HQ E/PO strategy is being reformulated**